

Banister (J. M.)

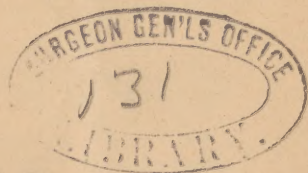
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LATERAL LITHOTOMY, WITH THE SUCCESSFUL REMOVAL OF
A CALCULUS AND SEVEN PIECES OF NECROSSED BONE
FROM THE BLADDER OF AN INDIAN SCOUT, NINE-
TEEN MONTHS AFTER THE RECEPTION OF
A GUN-SHOT WOUND.

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BY

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CHAUCH (or "Chalk," as he is commonly called), an Arapahoe Indian, 30 years of age, while acting as a scout for U. S. troops from Fort Reno, I. T., was wounded in battle with the Northern Cheyennes, near Fort Supply, I. T., September 13th, 1878. After the fight, the wounded were taken to Fort Supply, where this Indian was admitted to the Post Hospital, coming under the charge of Assistant-Surgeon T. E. Wilcox, U.S.A., who made, at the time, a detailed report of the case to the Surgeon-General. Assistant-Surgeon Wilcox gives me, in a private letter, a condensed account of the case while the patient was under his charge, and from this letter I make the following extract:—

"You must have heard from eye-witnesses of the extraordinary bravery of Chalk in the battle, in which he received his wound. I need not describe the seat of the wounds, as you have their cicatrices before you. The ball, after penetrating the saddle-tree, entered the right natis, passed through the pelvis, wounding the rectum and bladder, and made its exit just beneath the left pubic arch, carrying away a small portion of the arch, and wounding the left epididymis and scrotum. He was admitted to hospital at Camp Supply on September 15th, 1878, having been brought to the Post on a travois. For many weeks feces and urine passed through the posterior wound, or wound of entrance. There was a little infiltration of urine into the scrotum, and it was at one time enormously distended with fecal gases. Splinters of bone were discharged or extracted, from time to time, from the wounds of exit and entrance, and on one or two occasions fragments of wood were expelled per urethram. His treatment was supporting and antiseptic. The bladder was frequently washed out with a solution of carbolic acid (1 to 40), and borax and salicylic acid; thymol was also used. Gouley's "double (silver) catheter" was used when the bladder was irrigated. The urine, which was loaded with pus, blood, and phosphates, finally became normal; vesical irritation ceased; all wounds healed; urine was retained without difficulty; feces passed per anum, and the patient regained his flesh and strength. I was never able to detect any foreign body in the bladder."

In January, 1879, the patient left Fort Supply, returning to his tribe greatly improved. In the following July, he came under the observation of Dr. L. A. E. Hodge, Physician to the Cheyenne and Arapahoe Agency, near Fort Reno, I. T. Dr. Hodge has kindly furnished me with the following condensed report of the case:—

"Chauch came under my notice during the latter part of July, 1879. The patient at this time was suffering from a very obstinate cystitis, the result of a gunshot wound of the bladder. The ball entered posteriorly, passing through the sacrum and bladder, and making its exit through the scrotum. When he came under my observation, the wound posteriorly had entirely closed. The patient complained of intense pain in the region of the bladder, and passed more than the normal amount of urine, which occasionally contained pus, and numerous small fragments of bone, one of which, upon one occasion, I removed with a small pair of forceps, it having become lodged near the meatus. The patient voided all his urine by the urethra while under my care, and seemed to suffer intense pain during micturition, a resort to the catheter being frequently necessary in order to properly empty the bladder. The treatment was purely palliative."

Upon February 29th, 1880, this Indian was admitted to the Post Hospital, Fort Reno, I. T., coming for the first time under my observation. The site of the cicatrix of the wound in the right buttock was a point two inches above the tip of the coccyx, and three-fourths of an inch to the right of the median line; the cicatrix in the left side of the scrotum was also well marked. When admitted the patient was in a very feeble and pitiable condition, having been bedridden for months, and his whole appearance bespoke great and prolonged suffering. He was a constant sufferer from pain in the bladder, in the site of the old wound in the right buttock, and along the course of the great sciatic nerve of the right side, and was labouring under a very distressing case of chronic cystitis; there was also excessive irritability of the bladder, the patient with great difficulty retaining his urine, the acts of micturition being very frequent, and, in the intervals, the urine dribbling continuously through the urethra, so as to render the constant use of a urinal necessary. He passed several gallons of urine in the twenty-four hours, a bucket, holding two and a half gallons, frequently, being twice filled in that time; his thirst was intense and insatiable. According to the patient's own account, he had been in the habit of passing such a large amount of urine for some months before entering the hospital. The Agency physician mentions, in his report before given, that an abnormal amount of urine was habitually voided when the patient came under his notice in July, 1879. This urine was of low specific gravity; strongly alkaline in reaction; of an ammoniacal odour; contained no trace of sugar; contained pus and mucus, and frequently small fragments of dead bone; was frequently tinged with blood, evidently of urethral origin, but, strange to say, showed no trace of phosphates upon careful examination. The chief suffering from the time of his admission to this hospital, until the operation, was caused by the almost continuous passage per urethram of small jagged pieces of necrosed bone, each act of micturition giving him great agony. Upon one occasion a piece, larger than usual, was several days in passing from the bladder to the fossa navicularis, where it lodged, and its removal by the knife and forceps became necessary. He would sometimes pass as many as six or seven small bits of bone in one day; these little fragments were generally not expelled from the urethra by one act of micturition, their progress being slow, several hours frequently being the time required for their passage through the whole length of the urethra. The urine was frequently tinged with blood, from the constant wounding of the lining membrane of the urethra. Suspecting the existence of some foreign body in the bladder, I was desirous of making the necessary examination at once, but was deterred by the excessive irritability of that viscus, as well as that of the urethra, every attempt to introduce the sound into the urethra causing the patient intense

pain. Hoping for improvement in his condition, I postponed the examination for some time, but, finding the patient steadily growing worse, I determined to explore the bladder at once, so upon April 11th he was etherized, and the sound introduced. As soon as the instrument entered the bladder, I detected the presence of a calculus, and the existence of a foreign body being thus demonstrated, the examination was not continued further, as, on account of the irritability of the viscus, I was unwilling to prolong the exploration. Ever since his admission the patient had been under the best preparatory treatment for the operation now determined upon as a last resort, and this was continued until April 25th, when, at 2 o'clock P. M., I began the operation of lateral lithotomy, being assisted by Acting Assistant-Surgeon W. W. Hall, U. S. A., and Dr. L. A. E. Hodge, Physician to the Cheyenne and Arapahoe Agency.

By this operation I removed from the bladder a calculus and seven pieces of necrosed bone. The operation was necessarily prolonged for reasons presently to be stated. Ether was the anæsthetic used. Upon introducing my finger into the bladder, after making the deep incision, I at once discovered the calculus in the fundus of the viscus, and, in its neighbourhood, a mass of some foreign matter adherent to the bladder wall, which afterwards proved to be necrosed bone. The calculus was readily removed with the forceps, but it required some time to effect with my finger the separation of the pieces of bone from the wall of the bladder, their removal, then, through the perineal incision being comparatively easy. After carefully washing out the bladder, by which means were removed a number of bits of bone, similar to those the patient had been in the habit of passing per urethram, I made a careful exploration of its cavity with my finger and the "searcher," discovering up behind the symphysis pubis an encysted body, which I supposed to be another calculus. This body seemed to be somewhat egg-shaped, the base and body being firmly encysted, the apex free, and to the fingers and the "searcher" manifesting the characteristics of a calculus, being smooth and firm to the touch, and giving a *sharp, clear "click"* when struck with the steel instrument. Every legitimate effort to remove this body proving fruitless, I was at length compelled to leave it *in situ*, and conclude the operation, which, from the length of time required to separate the pieces of bone from the wall of the bladder, and from my justifiable efforts to remove the encysted stone, had already been much prolonged. The dimensions and weights of the calculus and bones were as follows: the *calculus* was somewhat the shape of a triangular prism, which, when placed upon its base, was one inch in length, half an inch in breadth across the base, and three-fourths of an inch in altitude. It weighed, the day after the operation, 90 grains Troy. This calculus was phosphatic in character, and had no appreciable nucleus. The largest piece of bone was somewhat square in shape, being one and one-fourth ($1\frac{1}{4}$) inches in length, and seven-eighths ($\frac{7}{8}$) of an inch broad, and one-quarter ($\frac{1}{4}$) of an inch thick, in its thickest portion; its weight was 55 grains. The second piece in size weighed 35 grains, and the five smaller ones, collectively, 17.5 grains. These pieces of bone were in parts encrusted with a thin layer of phosphates, and upon their exposed surfaces could be seen crystals of ammonio-magnesian phosphate. The treatment, both before and after the operation was, in general, that usually followed in such cases, and hence needs no description. After the operation the patient advanced steadily to recovery from its effects, without an untoward symptom with the exception of a slight intercurrent attack of pleuritis,

which began on April 30th, the sixth day after the operation, in a few days, however, readily yielding to treatment, the temperature during the attack never exceeding 99.8° F. The following is the record of the temperature and pulse, taken each day at 7 A. M., 12 M., and 7 P. M., for the four days immediately following the operation:—

	7 A. M.		12 M.		7 P. M.	
	Temp.	Pulse.	Temp.	Pulse.	Temp.	Pulse.
April 26th.	100 $^{\circ}$ F.	108	102 $^{\circ}$ F.	112	102.2 $^{\circ}$ F.	106
" 27th.	100.6 $^{\circ}$ F.	90	100.3 $^{\circ}$ F.	96	100.5 $^{\circ}$ F.	102
" 28th.	100 $^{\circ}$ F.	88	100.6 $^{\circ}$ F.	94	99.8 $^{\circ}$ F.	86
" 29th.	98.3 $^{\circ}$ F.	74	99.9 $^{\circ}$ F.	86	99.5 $^{\circ}$ F.	74

After the 29th inst. the temperature was never higher than 99.8° F., reaching this point only on two occasions, during the slight attack of pleuritis above mentioned, and the pulse never more frequent than 92. The patient has now (June 5th) entirely recovered from the operation; the perineal incision has healed; he is gaining flesh and strength; has a fine appetite; is in good spirits, and looks an hundred per cent. better than when he entered the hospital. Since the operation his chronic cystitis has greatly improved, the patient now having almost perfect control of the bladder, and not being troubled with the continuous dribbling of urine as before. He sometimes suffers slight pain in the site of his old wound in the right buttock, and over the sacrum. There are no signs of a rectal stricture. He has passed no more bone per urethram, except on the morning after the operation, when a small piece, which I think must have been in the urethra at the time of the operation, was voided with his urine. The quantity of urine voided in the twenty-four hours has, since the operation, been steadily decreasing, the average quantity voided in this period, during the latter part of May, being twelve pints five ounces, and at the time of this writing (June 5th) seven pints five ounces. This urine is still alkaline in reaction, and has yet an ammoniacal odour, but is not so offensive as heretofore. Its specific gravity is 1007, and it contains no phosphates and no trace of sugar. The abnormal quantity of urine, habitually voided, has frequently led me to suspect the existence of "diabetes insipidus," but I think now that the immense quantity of water the patient has been in the habit of drinking, to relieve what he termed the "hot feeling," has had a great deal to do with it, the voiding of such a quantity of urine being the consequence of the greatly increased ingestion of water. Although this may be true, nevertheless, the persistence of such an abnormal discharge of urine points to a pathological condition of the kidneys. The patient is now able to walk about the hospital on crutches, his chief inconvenience being the weakness of the lower extremities naturally following so many months spent in bed; *before* the operation, any extensive movement of the body would cause him great pain in the bladder. The patient also experiences some trouble from the encysted calculus, complaining of a feeling of soreness over its situation, behind the symphysis pubis.

Upon July 18th, the patient returned to his people comparatively a new man. For several weeks before leaving the hospital, he was in the habit of making, with the assistance of crutches, an almost daily visit to an Indian camp about three-quarters of a mile from the Post, returning in an hour or two in nowise inconvenienced by his exertions. Since returning to his tribe he has married again, and I have learned upon inquiry that

his sexual functions are uninjured. The control over his bladder is now perfect.

This case is, without doubt, one of the most remarkable in the annals of surgery. How this Indian, having received such a wound—the sacrum being perforated, the rectum badly involved, the bladder mutilated, and the os pubis wounded—could, after so many months of agony immediately preceding an operation of such gravity as that detailed above, come to the operating table with every chance against him, and then survive such an ordeal, and recover from its effects, is indeed wonderful. A point of the greatest interest in connection with the case, is the *passage per urethram of splinters of wood*, as reported by Assistant Surgeon Wilcox. The ball, before entering the body, passed through the saddle-tree, the patient being mounted at the time, and the splinters were evidently from this source, being driven into the body by the impetus of the ball, and probably accompanying it into the bladder, though possibly being left in the wound and afterwards effecting their entrance into the viscus by ulcerative absorption. Be this as it may, the splinters certainly made their entrance into the bladder and were discharged *per urethram*, and this fact alone would mark the case as unique. Instances of pieces of wood being driven into the bladder by projectiles are undoubtedly on record, but I have failed to find recorded, and that too after careful search, a single case in which such splinters were eliminated by the natural channel.

Another point of interest is the passage for so many months of *pieces of necrosed bone through the urethra*. The passage of these little fragments, after the patient came under my charge, was almost continuous, and from the patient's own account, and the report of Dr. Hodge, above given, these little bodies had been giving him great and almost constant pain for many months before I saw the case.

In the "Medical and Surgical History of the War of the Rebellion" (see Part II. Surgical Volume, Chapter vii., Section ii.) quite a number of cases are on record in which pieces of bone were passed through the urethra; but cases in which the passage of such fragments persisted for so long a time, as in the present instance, are few indeed—only three, or at most four, being recorded in the above-mentioned "Section." In one of these recorded cases (Case 808) pieces of bone were passed *per urethram* for *eleven months*; in Case 819 for *twenty-two months*, and in Case 817 such fragments are reported as still passing *eight years* after the reception of the wound. In the case reported in this article bits of bone passed almost continuously for many months, it not being possible to ascertain the exact length of time, but probably for a year or more, as their passage seems to date from a short time after the patient left Fort Supply, in January, 1879, and continued until April 25th, 1880, the day of the operation. Moreover, the case is interesting from another fact—the un-

usual size of the two largest of the pieces of bone removed by the operation; their weights and dimensions have already been given. These fragments, evidently from the sacrum, had undoubtedly been in the bladder for months, as they were partially encrusted with phosphates, and the patient had, for a long time, been suffering from symptoms referable to them. They must have made their entrance into the viscus by ulcerative absorption, since Assistant Surgeon Wilcox, in his report already given, states that while the patient was under his charge he was never able to detect any foreign body in the bladder.

There is nothing remarkable about the formation of the phosphatic calculus, as deposits of phosphates in the bladder after gunshot wounds of that viscus are often found (see "Medical and Surgical History of the War of the Rebellion," Part II. Surgical Volume, Chapter vii., Section ii., page 276), but it is indeed strange that it should have been formed with no foreign body as a nucleus, when there were so many pieces of bone in the bladder at the time of its formation. The pathological specimens removed by the operation have been donated to the Army Medical Museum, their numbers being 7020 and 7021 in the "Surgical Section."

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